Clean Water starts with you

The DNR tests waters throughout Iowa to make sure they are meeting state water quality standards. Those standards are in place to protect drinking water, aquatic life and recreational uses, like swimming. When a stream or lake doesn't meet those standards, the stream or lake is placed on the state's impaired waters list. The DNR then creates a plan which outlines ways Iowans can help improve the water quality in their community's lakes and streams.

DNR needs your input

Every Iowan needs the help of their fellow citizens and watershed groups to improve water quality in their community. If you or your group would like to meet with a DNR staff member to discuss water quality, please contact Chris Van Gorp at (515) 281-4791 or Chris.VanGorp@dnr.state.ia.us

DNR

For more information on water quality improvement plans, please visit www.iowadnr.com/water/watershed/

Maquoketa River

Pollutant: *Bacteria*

Pollution Sources: *Human and animal waste material*

The Maquoketa River needs your help. As you'll read below, the DNR is putting together a plan outlining the river's problems and possible solutions. But it's up to you to make sure those solutions are put into effect. A cleaner Maquoketa River depends on you.

What's wrong with the Maquoketa River?

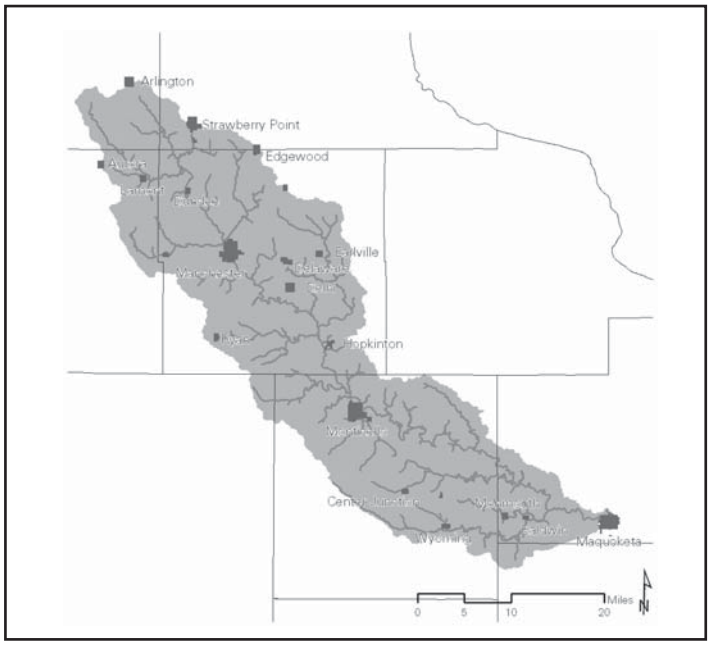
Pollution from human and animal waste, also known as fecal matter, keeps the river from meeting its state-designated standards. Untreated waste from these sources can carry disease-causing microorganisms, called pathogens, into the water. These pathogens can make people sick.

Testing for *E. coli* bacteria levels can indicate if there may be fecal matter and disease-causing pathogens present in the water.

The impaired segment of the Maquoketa River lies between Farm Creek in Jones County and the North Fork Maquoketa River in Jackson County. This stretch of the river is located on the northwest side of the city of Maquoketa and extends upstream for 27 miles. It drains a total of 959 square miles of land.

However, it's necessary to improve water quality in the entire watershed to maintain clean water in the river along the impaired segment.

Bacteria from the watershed have led to the Maquoketa River being listed as impaired. A watershed is the area of land that drains into the river.



The map above shows the Maquoketa River watershed shaded in gray. A watershed is an area of land that drains into a body of water. In this case, all land shaded in gray drains into the Maquoketa River.

What is causing the problem?

Most pollution in the Maquoketa River watershed (the area of land that drains into the river) comes from nonpoint sources, or sources that are not easily traced back to a specific "point," like a wastewater treatment or industrial plant.

In the Maquoketa River watershed, nonpoint sources include areas used to land-apply manure, and improperly connected or failing septic systems. Rainwater and snowmelt can wash waste from livestock (confined and pastured), pets and wildlife into the river.

To reduce the amount of fecal matter reaching the river, changes in waste and land management will be needed. It will take time to make these changes and to see the effects.

What can be done to improve the Maquoketa River?

The ultimate goal is to improve water quality and remove the river from the state's impaired waters list. To do that, sources of human and animal waste need to be cleaned up in the watershed.

Using research results and with the help of the public, the DNR has developed a water quality improvement plan (also known as a TMDL, or total maximum daily load). The plan will help reduce the amount of pollutants reaching the Maquoketa River. A water quality improvement plan is a suggestion to local communities on how they can work for cleaner water in their area.

To meet water quality improvement goals, there needs to be an 78 percent reduction in pollution from surface runoff, or pollutants that are washed off the land and into the river during a rainfall. There must also be a 40 percent reduction in the amount of constant pollution, such as leaking septic systems and cattle in streams.

While the DNR has done the background research and can provide technical and funding assistance, it is ultimately up to the watershed residents and businesses to take action and clean up the river.

The DNR has suggested the following conservation practices for the Maquoketa River watershed:

- Control livestock manure runoff from feedlots and pastures
- Follow manure application guidelines and control runoff from crop fields
- Limit cattle access to streams and explore other water sources for cattle
- Find and replace improperly connected or failing septic systems. Up to 65 percent of septic systems in the watershed are estimated to be failing and draining to the impaired segment of the river.